



PERCEPTION OF FLIPPED CLASS- ROOMS BY THE TEACHERS OF TAMK

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ABSTRACT

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Perception of Flipped Classrooms by the Teachers of TAMK

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The purpose of this thesis was to find out what is TAMK teachers' opinion of flipped classrooms regarding quality of learning, student-teacher relationship, and student engagement. The objectives of this study were to review relevant literature concerning this teaching method, investigate and analyze TAMK teachers' perceptions, and recommend possible steps to implement flipped classrooms in current teaching. Theoretical framework of the study provided conceptual knowledge on flipped classrooms model and its possible benefits and drawbacks. The data collection process consisted of in-depth face-to-face interviews with TAMK teachers. The collected data were analysed using thematic method.

The majority of participants found flipped classroom teaching method to be beneficial for improving students' motivation and engagement, promoting effective learning, efficiently allocating teaching time. At the same time the key findings indicated several concerns with the model, including time for planning, assessment, support of the colleagues and departments. The respondents identified the core skillset that would benefit both students and teacher in flipped classrooms. The knowledge gained from this research can be used to form a basis for curricula development and improvement, as well as teacher training advancement. Further research is required to improve the reliability of the current findings, and to get a broader overview of the teachers' perceptions of the new teaching methods.

Key words: flipped classroom, teacher, student, education, perception

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1 INTRODUCTION

TAMK, as a university with progressive views and modern teaching training, has always been interested in incorporating and applying new teaching tools that could possibly benefit its' students. TAMK does encourage and assist teacher development through different means. One of them is the workshops for TAMK personnel organized by Floworks, where TAMK teachers have an opportunity to learn about innovations in education and eLearning. Implementing new methods and models into traditional teaching always requires change. To change the current culture and attitude might be challenging, and suitable means to influence those on both individual and organizational level should to be found. (Haukijärvi 2015.) As a part of development department at TAMK, Floworks constantly researches the new opportunities for the innovation and future development of TAMK services.

At TAMK, the future goal is to find a strategy for the utilization of modern teaching and learning methods. From student's perspectives, the long-term goal is to be able to provide more and more alternatives to accomplish studies as fluently and dynamically as possible.

The topic for the current thesis was defined during the summer 2014 project at Floworks. The research aimed at identifying the supply of Massive Open Online Courses (MOOCs) for the future utilization at TAMK. One of the research objectives was to collect and analyze the information regarding complementary possibilities that MOOCs could potentially provide. During the research it was established that one of potential uses for MOOCs is to incorporate Massive Open Online Courses into traditional teaching in a form of flipped classrooms. (Shrestha, Mirzakabilov & Lazareva 2014, 19.)

In the fast changing world of education, flipped classrooms, also known as reversed teaching, have become one of the methods to incorporate eLearning and technological innovation into traditional teaching. This technique gains more and more popularity among higher education institutions all over the world.

The aim of this study is to get the wide overview of TAMK teachers' motivation and perspective on using flipped classrooms instead of traditional methods of teaching theo-

ry, and what are the possible reasons for doing so. The research explores how teachers perceive technology integration in their teaching.

The aim will be accomplished by fulfilling the following research objectives:

1. Reviewing available literature concerning the flipped classroom teaching method, its benefits, and drawbacks.
2. Explore and analyze perceptions and attitudes towards flipped classrooms by the teachers by conducting and analyzing face-to-face interviews.
3. Identify possible actions for future utilization of flipped classrooms.

The purpose of this thesis is to find out, what is TAMK teachers' opinion on flipped classrooms. The idea is to get teachers' point of view on flipped classroom model impact on student-teacher relationship, quality of learning and student engagement. The knowledge gained from this research can be used to form a basis for curricula development and improvement, as well as teacher training advancement.

The aim of theoretical framework in the context of the research is to provide conceptual knowledge of flipped classroom model, give an overview of its prospective benefits and drawbacks, and identify its place in blended learning. The methodology chapter of the thesis describes the process of the data collection and analysis applied in the study. It provides the theoretical overview of the thematic analysis, research design and planning, and data analysis stage of the research. The next chapter presents the results of the interview analysis. It describes the recurring themes in the collected data and summarizes the research findings. The discussion chapter of the research is aimed at analyzing the results of the study and providing recommendations. It also shows the significance of the findings and provides information for the additional research.

2 THEORETICAL FRAMEWORK

Technological development has brought the change to every aspect of people's life in the past few decades, including the way they learn. Knowledge once available to few is now freely open to anyone with the Internet connection. As Alexis Ohanian, the founder of reddit, said it, "The Internet has flattened the world... It allows us to learn anything that we want. A teenager with a smartphone has access to more knowledge than the president did a few decades ago." (How computers changed the way we learn 2014.) Students nowadays can access lectures from world's top universities by listening to podcasts on iTunes or viewing lectures on YouTube and Khan Academy. They learn by playing video games and using apps on their smartphones.

One of the most recent changes came with the discovery and popularization of MOOCs. Massive Open Online Courses became a buzzword in the world of education. MOOCs exploded into the academic consciousness in the summer of 2011, when a free Artificial Intelligence course offered by the Stanford University in California attracted more than 160,000 students from around the world. Inspired by the success, three new major MOOC technology platforms launched in 2012, namely EdX, Coursera, and Udacity.

With embracing technology in other aspects of life, technology is still not fully present in the classrooms. Most of the institutions still continue to favor traditional teaching methods, despite the change in students' learning patterns and preferences.

Blended learning relies on both use of face-to-face teaching and online learning. Garrison and Vaughan (2008, 5) described blended learning as "a design approach whereby both face-to-face and online learning are made better by the presence of the other—offers the possibility of recapturing the traditional values of higher education while meeting the demands and needs of the twenty first century."

To identify the place of blended learning in diverse types of teaching, learning could be presented in a form of continuum with face-to-face teaching with no use of technology on one end, and completely online, or distance, learning with extensive use of technology on the other end (Figure 1) (Bates 2014, 18). Blended learning belongs right in the middle of this continuum.

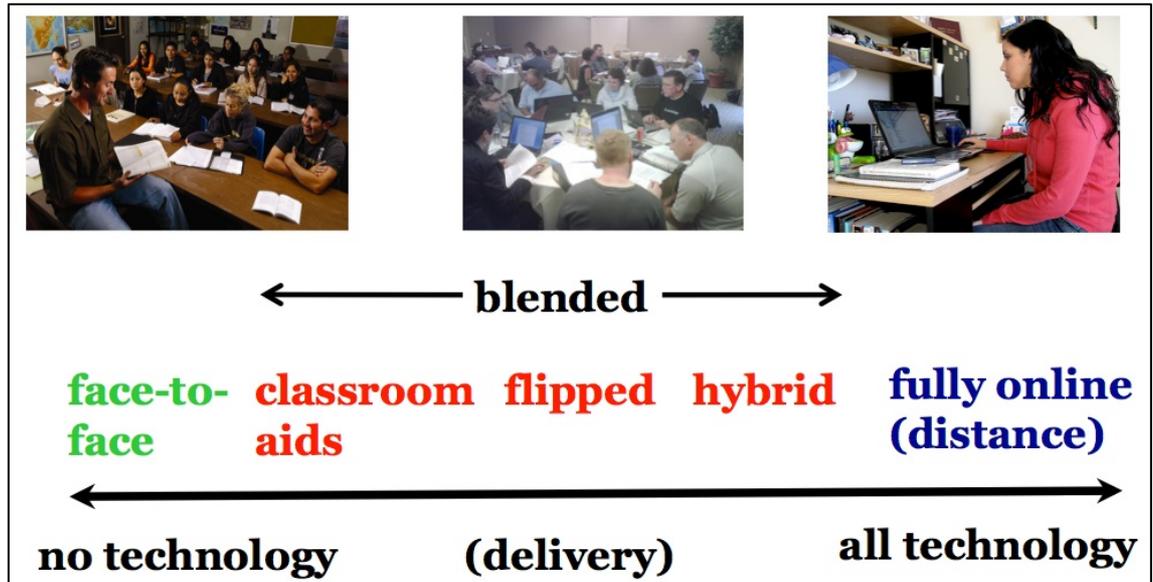


FIGURE 1. Blended learning (Bates 2014)

One of the delivery modes in blended learning that implies extensive use of technology but also has a face-to-face teaching phase is flipping the classroom. Recently flipped classrooms became very popular as a way of introducing technology in teaching in higher education.

2.1 Flipping the classroom

The term "flipped classroom" first appeared in 2007, when Woodland Park High School teachers Jonathan Bergmann and Aaron Sams began recording video lectures for their high school students and posting them online. Soon, the technique gained national recognition, and many teachers across the country adopted the idea of using flipped classroom method (Noonoo 2012).

There is still a discussion going on among scholars and instructors on whether there is one clear definition of flipped classroom delivery mode. The first ones to describe the process behind flipping the classroom were M.Lage, G.Platt, and M.Treglia in the research "Inverting the Classroom: A Gateway to Creating an Inclusive Learning Environment" (2000, 32), in which they stated that inverting the classroom "means that events that traditionally taken place inside the classroom now take place outside the classroom and vice versa". This interpretation lays out a scheme of elements in tradi-

tional teaching, when students are introduced to the new materials during lectures in class and do exercises and problem solving as their homework, being reordered. In the new delivery mode, the theory is learned at home, and the practical part takes place in class with the teacher being an instructor. However, this definition seems to be quite limiting, implying that the main idea of flipping the class is to change the order of activities in a learning process, rather than redesign the course structure and technology explicitly.

A broader view on flipped classrooms was introduced by Bishop and Verleger (2013). They elaborate that flipped classroom is rather a method used in education that comprises two major parts: interactive group learning, as an in-class activity, and direct computer-based individual instruction, instead of face-to-face lecturing (Bishop & Verleger 2013). This interpretation of flipping the classroom is used as a main concept in this research, as well as the same limitation proposed with video lectures being used as computer-based individual instruction.

2.2 Concepts behind flipped classroom

2.2.1 Social constructivism learning

The theory behind the group-based cooperative learning environment, mentioned by Bishop and Verleger, is embedded in the social constructivist learning. Popularized by Piaget and Vygotsky, constructivism implies that knowledge is always constructed by the person on their own (Laroche, Bednarz & Garrison 1998, 3). Social constructivism in classroom implies shifting teacher's role to instructor that would guide the students. Relying heavily on social context, working in groups in order to solve problems and master skills is another trait of constructivist classroom (Ozer, 2004).

Constructivist approach doesn't decline the value of the expert knowledge or the active role of the teacher. The role of the teacher is changed to assist the students to produce the knowledge themselves. The main purpose of the teacher according to constructivist learning theory is to provide necessary tool for the students, so they could develop their own ideas and makeup conclusions. Constructivist approach turns students into active

members of the learning process that build up their knowledge, instead of passively receiving it from the teacher. (Constructivism as a Paradigm for Teaching and Learning.)

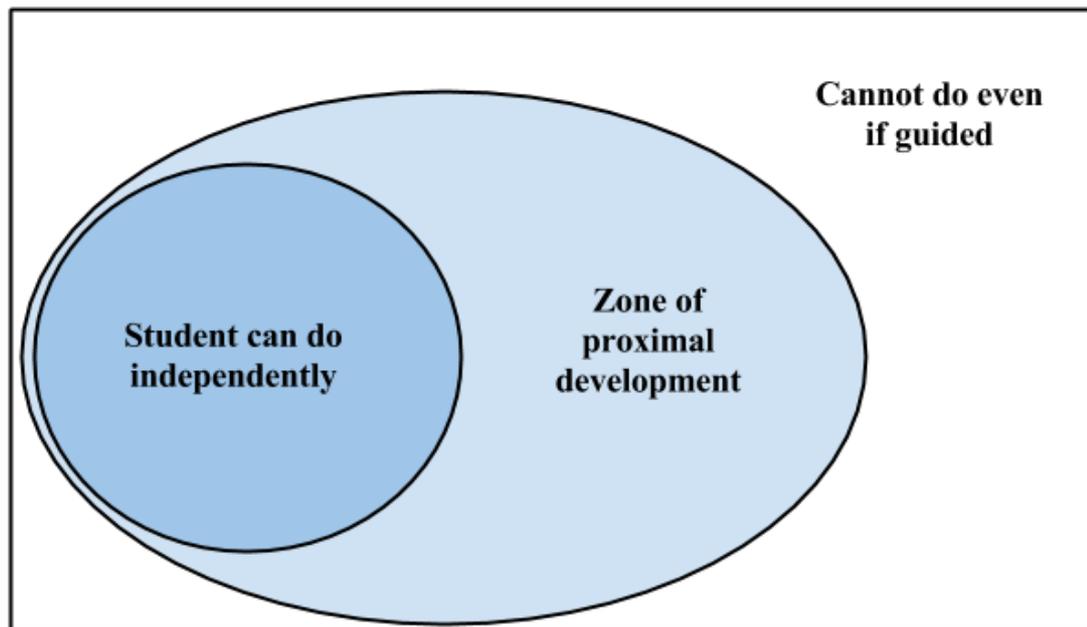


FIGURE 2. Zone of Proximal development

The base of social constructivist theory is formed on a Vygotsky's "Zone of Proximal Development" (ZPD) (Figure 2). ZPD is the gap between learner's actual development and potential development that is achieved with the help of educational support. In the higher education context the teacher is responsible for locating the student's position within the zone. It is important to find out what skills and knowledge the student already has in order to advance to the next level. The next level of knowledge and skills is achieved with the guidance of the teacher. (Coffey 2009.)

In the basis of flipped classroom delivery model, there lie two important concepts: educational technology and learning through activity that influence the learning environment. The concept relations are described on the picture below (Figure 3).

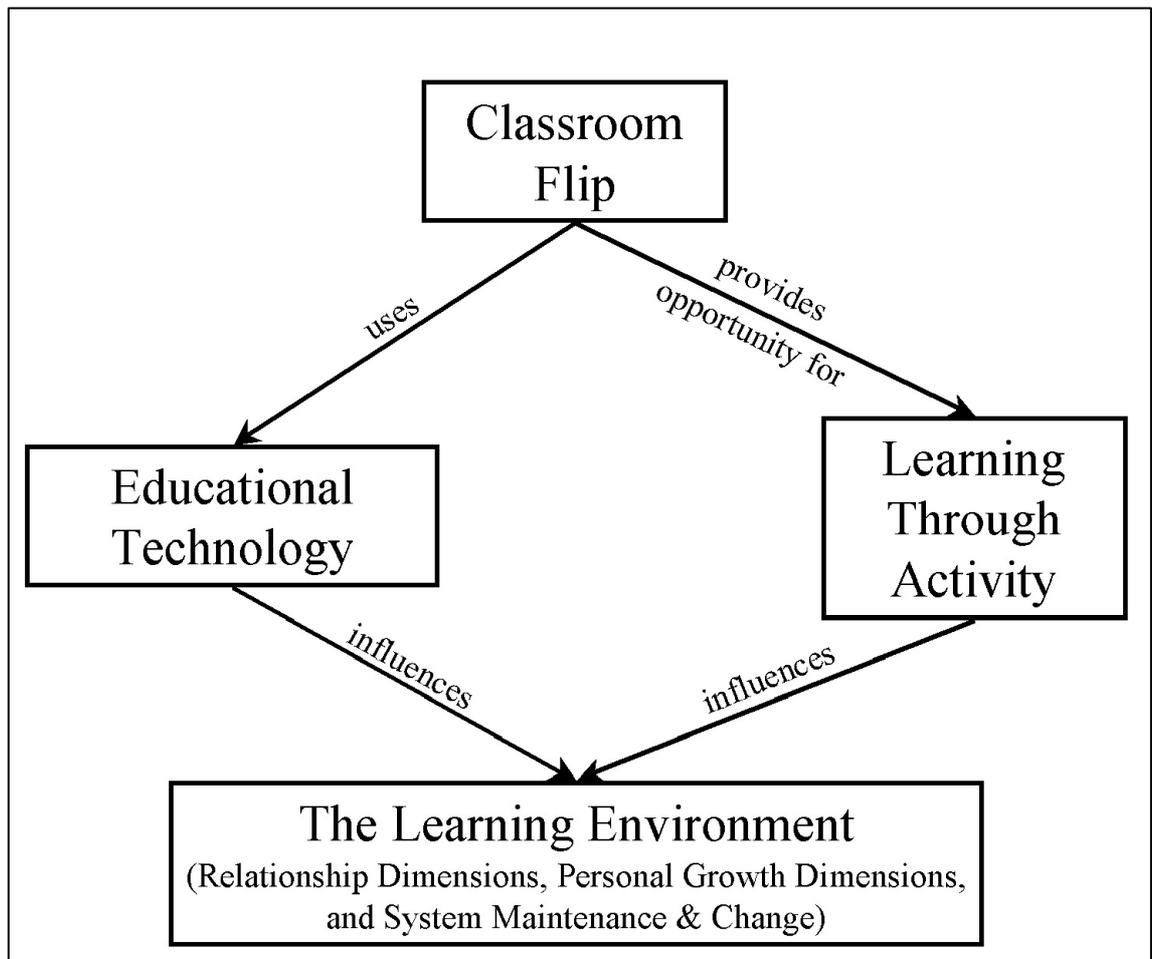


FIGURE 3. Flipped classroom concept model (Strayer 2007)

2.2.2 Educational technology

As seen from the picture, teachers use educational technology to flip the classroom. Back in 1977 Association for Educational Communications and Technology (AECT) Definition and Terminology Committee defined educational technology as a field that is involved in application of elaborate, comprehensive process in problem solving and analysis in human learning. Later in 2004, the concept would be narrowed down to educational technology being "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources." (AECT 1977, 2; AECT 2004, 1.) Garrison and Anderson (2003, 34) describe educational technology as tools that are used in teaching process in order to engage both teachers and learners in activities designed to be beneficial for learning.

2.2.3 Learning through activity

Learning through activity, or activity based learning, is another concept that plays important role in understanding flipped classrooms. Prince (2004) defines active learning as "generally defined as any instructional method that engages students in the learning process". He states that the main ideas of active learning are to use activities in traditional lecturing, as well as encourage student engagement in the classroom (Pince 2004, 223, 225).

2.3 Reasons for flipping the classroom

2.3.1 Bloom's revised taxonomy

Traditional model of teaching implies that students gain the first knowledge during lectures, which means doing lower levels of cognitive work in terms of Bloom's revised taxonomy. The Taxonomy of Educational Objectives is a chart for categorization of educational goals, objectives, and standards. The revision of original Taxonomy introduces two dimensions: knowledge and cognitive process (Anderson & Krathwohl 2001).

Higher levels, on the other hand, are left to be covered at home by doing homework. In the flipped model the order is quite the opposite. Students study new materials before coming to class and learn how to apply, analyze, evaluate, and create through activity in the classroom with the teacher (Figure 4).

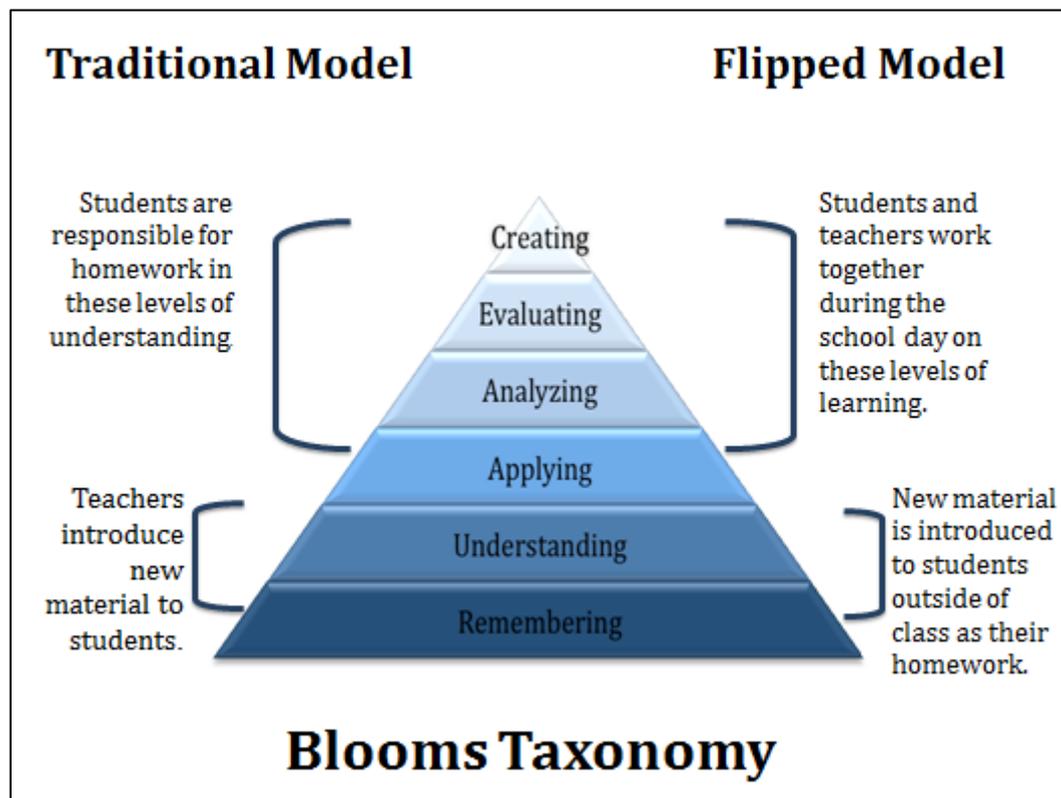


FIGURE 4. Blooms Revised Taxonomy (Williams, 2013)

Bloom states that the emphasis on higher mental processes is important, because this kind of learning allows the person to relate gained knowledge to every-day activities and experiences. He also explains that those skills are seen "as one set of essential characteristics" for continuing learning and adjusting to quickly changing situation. (Bloom 1978, 578) In a flipped model, the students manage higher level of the pyramid through collaboration, activity-based learning with support of the teacher, and peer students. With activities engaging lower levels of cognitive work happening outside the class, students have more time to cultivate their critical thinking. (Lemmer 2013, 464)

2.3.2 Improving student experience

Flipping the classroom can help to improve student engagement by shifting the focus from teacher-centered to student-centered learning (Bergmann & Sams 2014, 20). As stated by Newmann, "engagement involves psychological investment in learning, comprehending, or mastering knowledge, skills, and crafts, not simply a commitment to complete assigned tasks or to acquire symbols of high performance such as grades or social approval." (Newmann 1992, 12.) With the more time assigned for practical

hands-on activities instructed by the teacher, students have more flexibility to explore their passion and also get more meaningful learning experiences.

One of the most significant impacts flipping the classroom has on student-teacher relationships. The teacher becomes an instructor, guiding students' learning process, rather than an only source of knowledge with dictating power. As it was previously mentioned, teaching becomes learner-centered instead of teacher-centered. Students are getting more and more responsibility for their own learning. At the same time relationships between student and teacher are getting stronger: both student and teacher are able to receive immediate feedback on the progress. Bergmann and Sams (2012) state that due to increased time to interact with the students, teachers can build better relationships with them and, consequently, encourage them, inspire, and listen to their needs.

One of the several benefits of using flipped classrooms is that students can study theoretical part at home at their own pace in a suitable for them time. When using videos as a source of information, students have an ability to pause, reflect, analyze, think, and re-watch materials, which deepens the learning and benefits the learning outcomes. At the same time, using videos as a teaching medium engages the students more than pictures or audio materials and provides them with "unique pedagogical characteristics of its own". (Bates 2015.)

It was discovered that an average attention span of a student, meaning the time period a person actively listening to the lecturer, is rather short. As noted by The Teaching Center journal citing study by Johnstone and Percival (1976), the students were observed in the class, at the breaks in their attention were registered. The first attention lapses were noticed after only 10-18 minutes from the beginning of the lecture, and at the end of the lecture every 3-4 minutes. (The Teaching Center Journal, 2013.) Having an asynchronous theory learning part can help overcome this problem and promote better understanding and remembering of the materials by the students.

During the study conducted at TAMK in 2014 on impact of interactive media on learning, the students were asked if they prefer learning the theory by watching videos and doing assignments at their convenience instead of having traditional lectures (Figure 5). As many as 40% of all the respondents prefer learning by watching educational videos, as well as doing assignments at their convenience: 17% and 23% answered "somewhat

agree” and “strongly agree” to the statement. 40% of the survey respondents neither agreed, nor disagreed with the claim. 20% of the students would preferably choose traditional methods of learning and having assignment deadlines at their convenience (11% and 9% answered "strongly disagree" and "somewhat disagree" to the statement). The results show that TAMK students feel quite comfortable with using educational videos for learning. (Shrestha, Mirzakabilov & Lazareva, 2014.)

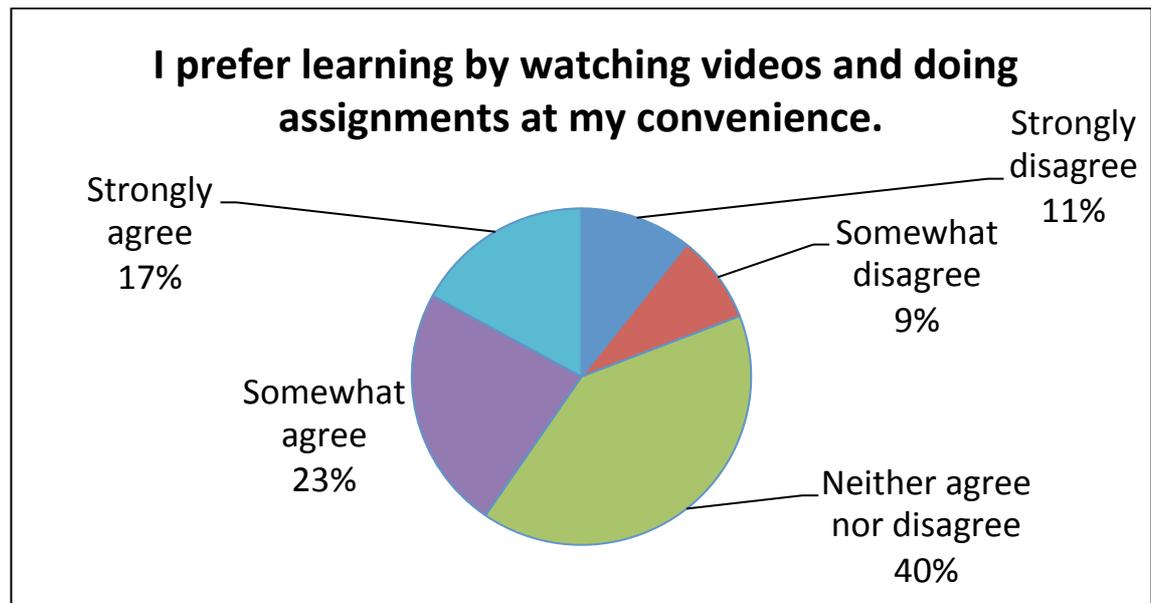


FIGURE 5. Students opinion on watching videos (Shrestha et al. 2014)

2.4 Drawbacks and barriers of flipping the classroom

Although the impact of flipping the classroom might be significant, there is always a possibility for the drawbacks of the model and possible barriers of implementation. Mike Acedo (2013) from [te@chthought](http://te@chthought.com) states that the 5 main concerns of flipping the classrooms are:

- Available technology for the students to watch videos at home, and for the teachers to produce content;
- Time consuming for the teachers
- The dependence on students motivation and preparation for the class;
- The standardized testing becomes difficult to execute;

- The time spent by the student in front of the computer.

One of the possible pitfalls of taking flipped classroom into practice is availability of the technology. That does include computers and Internet connection for the students to be able to learn theory at home. Although according to Official Statistics of Finland (2014), eighty-six per cent of the population aged 16 to 89 uses the Internet, there still might be a problem with Internet access at some rural places of the country. The teachers are also bound with the technology they are supplied by the universities, in case they are willing to produce their own content.

The flipped classroom model heavily relies on the students' willingness and motivation to prepare in advance, before coming to class. The learning quality and outcomes depend on students' self-discipline and ability to learn at their own pace. This model also requires students to allocate the time correctly to manage large scopes of theoretical basis they are given. Jason Krueger (2012) from educational company StratoStar supports this point of view and adds that "some students are not as motivated as others, and this method of teaching may allow those less motivated students to get less done."

One of the most significant drawbacks of flipping the classroom is that it is quite time consuming for the teacher. The responsibilities of the teacher usually include course redesigning, changing the structure, coming up with the new learning activities for the class time, and of course, content creation or adaptation. (How to Flip a Class 2013.)

2.5 Student achievement

There are several studies conducted to reflect on student achievement in a flipped classroom. One of the studies was conducted at the University of Toronto in 2012-2013. The course Introduction to Programming was taught both traditional and inverted ways. In an inverted classroom students would prepare by watching videos before coming to lecture. During the lecture they would work on exercises solo or in pairs. After the lecture they would do the online exam. The examination rates were measured and compared at the end of the courses. The study showed that the exam in flipped course was rated as

hard as the traditional one. The grades in the inverted exam were eight percent higher than in traditional. (Gries, Campbell, Craig, Horton & Zingaro 2014.)

Another example that showed positive change in student achievement is switching to flipped classrooms from traditional teaching in a Marketing Research course at Central Michigan University. The teacher recorded short podcasts for his students to watch before coming to class. By watching the videos first students were more prepared before group activities in the class. The teachers stated that only five percent of students earned four points for the course. By flipping the classroom the number grew to thirty-five percent. He also noticed significant increase in students' practical skills in a new teaching mode. (Flipping, Podcasting, and Friendly Competition.)

Engineering Electronics and Circuits course at San Jose State University had a low passing rate with forty percent of students receiving C and lower grade at the end of the semester. The teachers have decided to flip the classroom to improve the course achievement. Those students in the flipped version of the course watched edX lecture videos at home and attended the class for the practical training. According to Khosrow Ghadiri, the university teacher of the flipped course, midterm grades of the students in flipped classroom were ten to eleven points higher than those in the traditional classroom. (San Jose State U. Says Replacing Live Lectures With Videos Increased Test Scores 2012.)

Another study was conducted at the University of British Columbia by Dr Louis Deslauriers. The study introduced the compulsory physics course taught to undergraduate engineering students. The flipped classroom model was implemented on the twelfth week of the course to one of the two groups in the course. The students learned theory by reading assignments at home and spent their class time on problem solving and group activities. The test results showed the significant improvement in students' average grades. The average score of the group in traditional classrooms was forty-one percent compared to seventy-four percent in the flipped version. (Deslauriers, Schelew & Wieman 2011.)

2.6 Student assessment

One of the key questions that arise in the process of implementing the flipped classroom is what assessment technique to use in the new teaching model. Centre for Teaching Excellence of University of Waterloo suggests choosing assessment strategies including online quizzes, discussion, concept maps, critical reading, etc. However, two the most popular techniques for flipping at the moment are Peer Instruction and Just-in-Time Teaching. (Online activities and assessment for the flipped classroom.)

2.6.1 Peer Instruction

Peer Instruction is a method developed by Professor Eric Mazur at Harvard University in the 1990s. In Peer Instruction approach students are expected to learn theory before lectures. During the class time the technique follows several steps (Figure 6):

- mini-lecture by the teacher on the topic;
- students are given a question or a problem on the topic to solve;
- students answer to the question individually and then proceed to discussion with peers with an aim to convince that his or her answer is correct one;
- the students respond to the same answer one more time;
- the correct answer is revealed;
- students explain their decision;
- broader explanation is provided by the teacher. (Schell 2012)

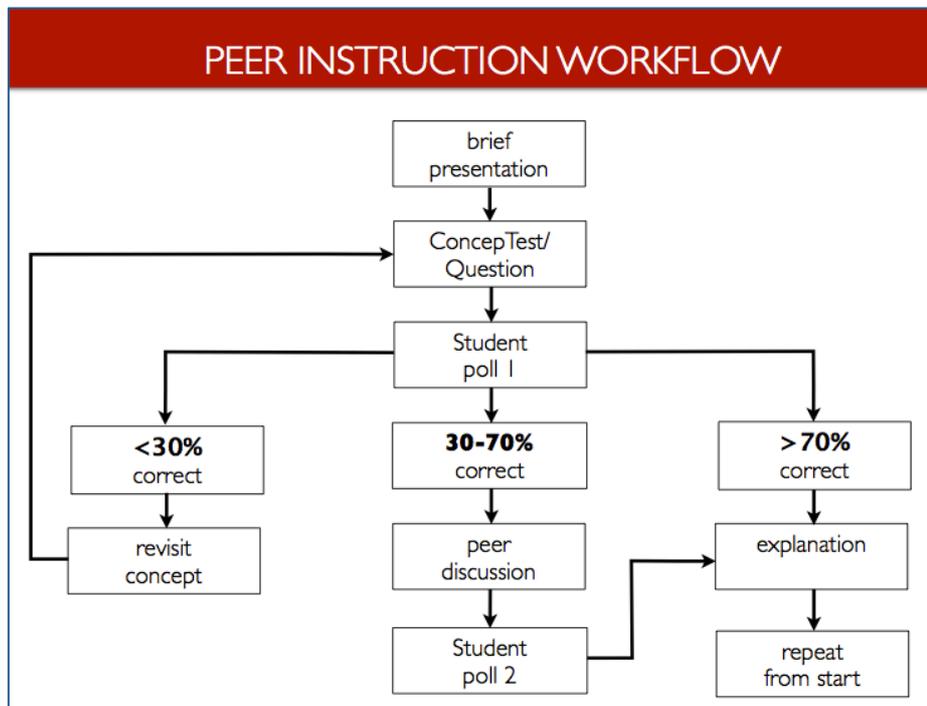


FIGURE 6. Peer Instruction workflow (Schell 2012).

2.6.2 Just-in-Time Teaching

Just-in-Time Teaching is a method designed by Gregor Novak. The approach requires students to prepare for class activities by learning theory online provided by the teacher. Then they work on the complex assignment on the topic. The answer should be delivered to the teacher before the lecture, so the teacher has time to review the assignments and adapt and modify the lectures based on the students' needs. (Novak, Patterson, Gavrin & Enger 1998.)

Professor Ives Araujo from the University of Rio Grande do Sul suggests implementing both approaches into flipped classroom model. The structure of the in-class and out-of-class activities are shown in the picture below (Figure 7). (Schell 2012)

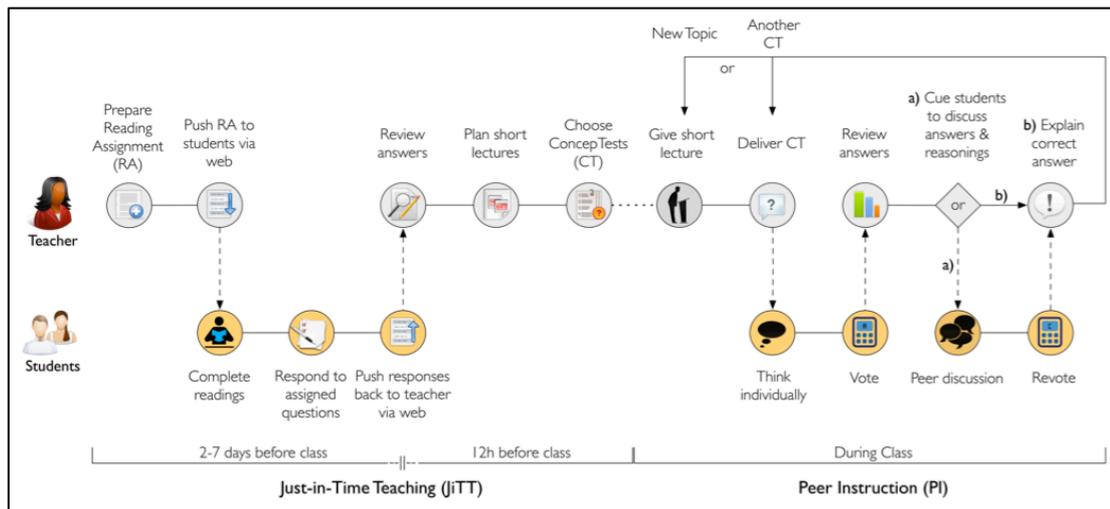


FIGURE 7. Implementing Just-in-Time Teaching and Peer Instruction (Araujo 2012).

2.7 Conclusion of the chapter

The theoretical framework chapter provided definitions and limitations of flipped classrooms. It described the concepts behind the model, including how social constructivist learning and Vygotsky's Zone of Proximal Development are related to the classroom flip. The concept explained the teacher's role as an instructor in the classroom and students' role as active builders of the own knowledge. Educational technology and learning through activity concepts also form the basis of flipping the classroom.

The theoretical framework provided an overview of potential reasons and benefits of flipped classroom model. It examined the Bloom's revised taxonomy in connection with activities assigned in and out of the classroom in flipped teaching. The chapter also explored how student experience can be improved with the help of reversed teaching. Inverting the classroom improves student engagement, deepens their knowledge, and improves relationship with the teacher. Successfully implementing flipped classroom model into teaching requires open-mindedness, willingness to try new things, as well as ability to gain and utilize a set of skills from both students' and teachers' point of view.

The chapter described possible drawbacks of implementing flipped classrooms and concerns with the model. Limited resources and technology available for both teachers and students may become obstacles for taking the model into practice.

Changes in students' achievement and assessment were described. The assessment of the students learning by using correct in-class activity was examined. Two popular tools, peer instruction and just-in-time teaching, and how those can be used together in a flipped model were explored.

3 METHODOLOGY

This chapter provides a description of methodology used in this research. The research consisted of the relevant literature review concerning the topic and in-depth interviews with TAMK teachers.

3.1 Literature review

The purpose of the literature review was to form theoretical framework for the research. The process consisted of finding and collecting relevant information on the flipped classroom delivery mode using articles, books, online publications, videos, etc. The literature review gives the description of the flipped classrooms definition and presents the concepts behind the model. It presents the knowledge on the possible impact, benefits and drawbacks of flipping the classroom to support the objectives set in the research.

3.2 Research design

The qualitative research was selected over quantitative in order to gain knowledge on participants' perceptions and get deeper understanding of the findings. The purpose of the interview is to be able to enter interviewee's perspective. Qualitative interviewing starts with an assumption that this perspective is "meaningful, knowable, and able to be made explicit". (Patton 2002.) Interpretive validity of qualitative research means representing interviewee's reality and perception, and portraying meanings attached by the interviewee's to the study subject accurately. To enhance the interpretive validity the verbatim information, including the actual language, and personal meanings of the participants (e.g. direct quotations) are used. The reader can experience the interviewee's perspective due to verbatim reporting usage. (Principles Supporting Qualitative Research.)

Since qualitative research is representing interviewees' perspectives and their personal experience, it is critical to the extent to which the qualitative research findings reflect

those perspectives. Participants' own words, direct quotations, provided in line with the researcher description and analysis aid the reader to evaluate the credibility of the researcher's claims about the data. (Fossey, Harvey, McDermott & Davidson 2002.)

Due to the nature of the study being qualitative the in-depth interview with the teachers was selected as a primarily research instrument. In order to achieve the objectives defined by the research, the in-depth semi-structured interviews were conducted with the TAMK teachers.

3.2.1 Sample selection and limitations

It was decided to contact all Heads of Degree Programs via email for personal recommendations on the teachers, who might be interested in participating in the study, to find suitable candidates for the interview. Due to the research being conducted during the winter holiday season and overall busyness of the higher-level management of the university twenty-five teachers of TAMK were mentioned as possible candidates for the interview.

The goal of the research was to interview experts with different backgrounds and teaching in different fields, and, ideally, representing as many degree programs at TAMK as possible. The equal representation between the sexes was also an important factor.

All the teachers were contacted via email explaining the research purposes and with an invitation to the interview. Out of twenty-five eight teachers were available for participation in the given timeframe. These eight-selected candidates form a group of people interviewed for this study. The interview participants represented seven degree programs of TAMK. The interviewees' experience in teaching varied from couple of years to fifteen years. Difference in years of experience and fields of teaching bring diversity to the study.

The interviewees were given a choice to be interviewed either in English, or in Finnish. All the questions were translated in both languages with an intention not to restrict teachers from participating due to the language preference or skills. The interview lasted for thirty minutes in average.

All the interviews were audio recorded. The interviewees were kept anonymous, stating just the subject of teaching and personal opinion without revealing any personal information. The tapes were later transcribed for the purpose of the analysis only. All the interview participants were asked to sign the consent form before participating in the interview. The consent form stated that the participant understands that:

- Participation in this interview is voluntary;
- The interviewee may refuse to answer any questions they would prefer not to;
- They may withdraw from the study at any time;
- The personal information won't be included in the transcription / research report;
- The interview will be transcribed and the answers will be used in TAMK's internal services to help gaining comprehensive point of view on Flipped Classrooms.

3.2.2 Interview design

The process of the design started with the interview outline planning. The questions for the interview were designed based on research objective that is set to explore and analyze perceptions and attitudes towards flipped classrooms by TAMK teachers. There are seven main questions with possible follow-up questions (Appendix 1).

1. Can you please describe your typical lecture?

The first question of the interview aims at finding out teachers' typical lecturing style, time usage during the lecture, and use of materials and technology during the lecture. After the first question the teachers were shown a picture of flipped classroom model and also given a short description of the main principles (Figure 8).

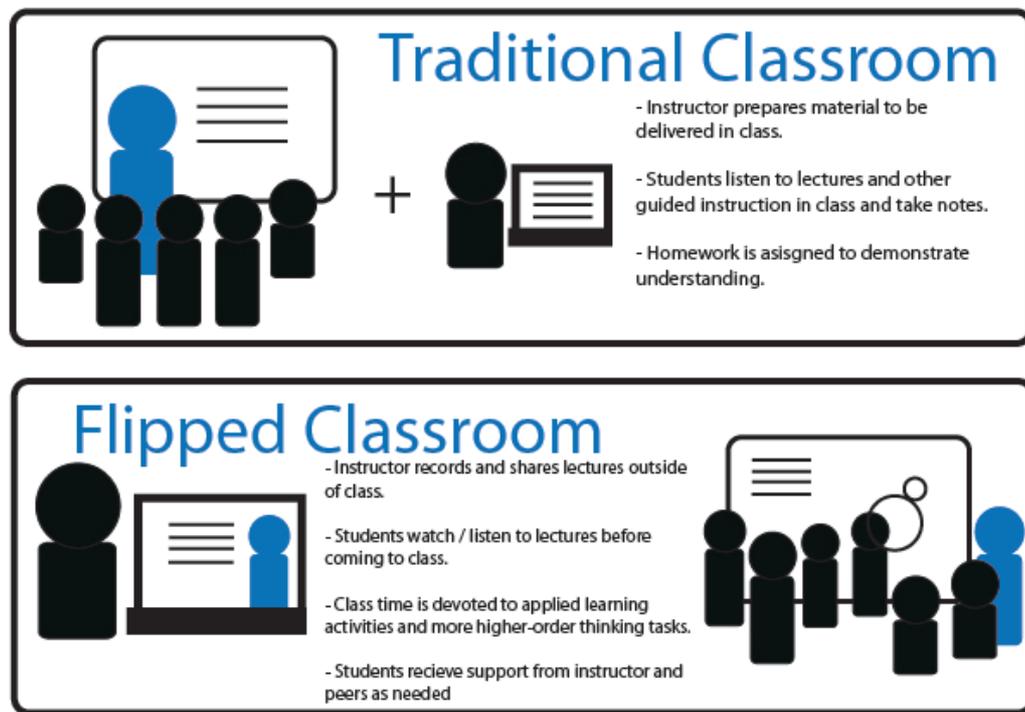


FIGURE 8. Flipped vs Traditional (Educause 2012)

2. Have you ever heard of flipped classrooms delivery mode before?

The next question is set to find out about teachers' previous knowledge of the flipped classroom in order to adjust the following questions.

3. What is your opinion on flipped classroom model?

Also the respondents were asked about their personal opinion on the model that was just presented to them and what are the possible benefits and drawbacks they see in using it. This question serves as a warm-up before the more in-depth discussion on the topic.

4. If you would implement flipped classrooms, what in your opinion would be the impact?

The next question is aimed at finding out teachers' opinion on possible impact on student engagement, quality of learning, and student-teacher relationship. Depending on previous knowledge and experience of the respondents, the question was set to get either hypothetical information, or based on the practical experience.

5. What skills on your opinion would students need to benefit from a flipped classroom environment?

6. What skills on your opinion would teachers need to benefit from a flipped classroom environment?

The two questions mentioned above are designed to find out, what set of skills on teachers' opinion would both students and teacher need in flipped classroom.

7. If you decide to implement flipped classrooms, what are the factors that would influence your decision?

The last pre-written question is set to gather information about social and practical factors that teachers would take into account before considering to flip the classroom. The possible follow-up question would be about content availability, technical support provided by TAMK, and time allocation.

3.2.3 Data analysis

After the data collection phase of the research, the transcribed interviews were analyzed using thematic analysis method. The thematic analysis means analyzing interviews by encoding qualitative data and compiling it into themes. Applied thematic analysis is described the best as set of actions designed to identify and examine possible themes from textual data in a way that is transparent and credible. (Guest et al. 2012, 15.) The analyzed data is presented in a way that enables readers to easily see the relationship between the data and its interpretation. Usually qualitative data is presented by using illustrative quotes, the "raw data", which is analyzed and arranged, not just listed. (Anderson 2010.)

The thematic analysis of the research is approached with the deductive way meaning that the coding and theme development is directed by existing concepts or ideas of the study. The process of the data analysis includes six steps explained by Braun and Clarke (2006):

1. Familiarization with data

The first step of the process involves transcribing the interviews and re-reading generated materials for several times in order to get familiar with the analyzed content. This process is crucial and assists better execution of the following steps in the analysis.

2. Generation of initial codes

The next step in the process implies creating the initial codes derived from the whole set of data available. The codes are best described as "shorthand labels - usually a word, short phrase, or metaphor - often derived from the participants' accounts, which are assigned to data fragments defined as having some common meaning or relationship." (Carpenter & Suto 2008, p. 116). During the data analysis process hundred-twenty initial codes were assigned. Merging the similar codes later reduced the codes number to ninety. The codes and families can be seen in Appendix 2.

3. Searching for themes among codes

The following process involves combining initial codes into themes. Themes represent an "idea that captures something important about the data in relation to the research question that represents a pattern in responses." (Braun & Clarke 2006). In the process of analyzing the codes were assigned to different families and super families, or themes. Families and super families are the terms used in the ATLAS.ti software program.

4. Reviewing themes

This step includes refinement of the existing themes, review of the relations between the themes, pattern forming, as well as possible theme rearrangement if needed.

5. Defining and naming themes

At this point in the analysis the themes are renamed from the working titles to the "official" names. The names of the themes should capture the essence of each theme, be concise and descriptive.

6. Producing the final report

The last step includes presenting the final result of the research in the form of final report. The findings are analytically described; the relations between the themes and patterns are clearly stated and backed with the extracts from the data. (Braun & Clarke 2006)

The thematic analysis of this research was performed using the ATLAS.ti software for the coding and theme definition. The purpose of the analysis was to reach some hypothesis, conclusion by going through large sets of data and reducing it into manageable amount of information that is easy to understand (Blackstone 2012). The example of quotations, links, codes, and families formations and relations can be found in Appendix 2.

4 FINDINGS

At the beginning of the interview the respondents were asked to describe their typical lecture, preferred teaching styles, materials and technology they use. The interviewees eagerly described their typical teaching day, lectures, in and out-of-class activities, their roles in the classrooms, relationships with the students, structure of the courses that they teach, methods and materials they use. The explanation process served as an observation of teachers' preferences and expertise and gave an overview of the diversity of the respondents' backgrounds.

Data analysis indicated that the interview participants have very different teaching styles. Some of the respondents are using traditional teaching methods, e.g. lecturing in front of the audience, and some of them are actively using flipped classrooms and recording their own lectures. Several teachers use problem-based learning as an in-class activity on a daily basis. The majority of the respondents were somewhat familiar with the concept of flipped classrooms prior the interview. They were then asked about their personal opinion on flipped classrooms and possible benefits and drawbacks that they see in this model.

During the data analysis process several themes were formed from the initial outcome. The themes are presented in a chapter below and divided in four major parts describing benefits, concerns, skills and video production.

4.1 Benefits and positive impact of using flipped classroom model

4.1.1 Promoting deeper and more effective learning

The interview participants were able to immediately identify several advantages in the flipped model that would benefit the students and their learning process. The majority of the interviewees noted that the biggest impact the model has on promoting effective learning. The students come to the class prepared and have the theoretical knowledge on the subject; that way they can already identify obstacles in the learning process themselves.

Then it's also that if people have already study the subject before coming to the classroom by using the videos or the textbooks, then the subject is familiar to them and the discussion and interaction, and group work on that would be more natural and more effective... So If they encounter difficulties while watching the videos, or they don't understand something or they read the text, and they don't understand what they are reading: some difficult concepts or words, or so. They can come to the classroom and more easily... they already know, what they don't know. Instead of listening to the lecture, they forget about difficult things. (Interviewee 1.)

The interviewees noted that one of the benefits is that the students try to solve the problems and overcome obstacles by themselves first, and then get teacher's help if still needed. The process also creates a loop of interaction between the students and the teacher.

That could be a good thing, if someone is trying to solve the problem. And they to find the problem that he can't solve then next it easier for the teacher. They can ask and teacher can tell you, I think it's a better idea. To first try to solve the problem and if problems occur later on you can ask. And if you had looked at the problem first, then it is in your head... "I must know this! I have to know this!" "I must ask this!" (Interviewee 4.)

Flipped classroom model does impact their preparedness to the test, because they went through the theory, they had an opportunity to ask questions and discuss with the teacher the things that they have problems with (Interviewee 6.)

One of the respondents noted that the student engagement into the learning process starts before coming to the class. By watching videos and learning theory at home students are already involved in the learning cycle.

If they do something in terms of watching the videos or really reading the texts, it would be already certain kind of involvement that is more, that just walking into the classroom and waiting for the teacher to speak. (Interviewee 1.)

The other teacher stated that “the students learn things more deeply in the flipped classroom model, and they will be remembered for longer” (Interviewee 7.)

4.1.2 Students' role changes

One of the opinions that was expressed by several respondents is that in flipped classroom model the students take the active role, which also does promote better quality of learning. The teachers described the students' active position as a positive change in the learning environment and that is what they expect to see in their current teaching. "It activates the students, they need to take an active role in their own learning." (Interviewee 5.) One of the respondents noticed that "it does activate the students; they are more active and speak more, whereas the teacher speaks less." (Interviewee 7.)

The interviewees noted that flipped classroom implies shift in responsibilities between students and the teacher. "Well, the more responsibility we can give to students, and the more we can encourage them to study themselves, the better. To put it short... I'm trying to do myself less in the classroom, and make the students do." (Interviewee 2.) The same respondent states that the reason he decided to use flipped classroom model was that he "wanted the students to do more. And change the emphasis from what I am doing to what they are doing." (Interviewee 2.)

Another interview participant mentioned that she thinks, "that the teacher's biggest responsibility is to ask good questions. To ask relevant and good questions. And then the answer is the students' responsibility. Instead of the other way around." (Interviewee 8.) The role of the teacher is described as being a coach or instructor guiding students in the process of knowledge construction.

4.1.3 More efficient use of contact teaching time

Some of the respondents noted that the time allocation and usage in the flipped classroom model would differ from the traditional model. They stated that the model would allow using face-to-face teaching time more effectively.

Now it might happen, and it happened during my first courses, that I didn't quite clearly know what those students had already learned about the subject. And then some of the things they have already learned, so that was unnecessary to teach them. Then some issues were too complex and I used too little time for those. So in that kind of interaction the usage of time would be correct. (Interviewee 1.)

Interview participants that the time allocation is a major problem at the moment, and the teachers have a minimum amount of contact teaching with the students. That is why rethinking the time utilization in the class is a major advantage of flipped classrooms, in teachers' opinion. Another interviewee told that he uses flipping "as a tool to use the face-to-face time differently." (Interviewee 2.)

On the other hand, by flipping you have time for the measurement assignments, but also for week exams. Without flipping we wouldn't have that time – which is more important from my point of view, is to free time to use it to hard topics, or to those things that students think they have problems with. So that we can cope those during the classroom time. It frees time. (Interviewee 2.)

4.2 Concerns with flipping and factors to consider

Another major theme that occurred in the analyzed data is concerns and factors that the respondents would consider before flipping. The interviewees were uncertain about the assessment of teaching in the flipped classroom, time allocated for the course redesigning, student motivation and support from the university.

4.2.1 Time

The biggest concern respondents expressed with the flipped classroom model is the amount of time needed for both planning and redesigning the course from the beginning, producing videos and searching for the new materials and activities, or rescheduling the curricula.

"Time is an important factor! That is something I struggle with all the time. Because I believe that flipped classroom takes more time." (Interviewee 8.) The respondent, who uses flipped classrooms, noted, "it takes enormous amount of teacher's time. Mostly in the beginning. Of course, once you have all the materials, all the videos, you can use them. You don't need to change them every year." (Interviewee 2.)

The other lecturer, who also currently utilizes the model, stated that flipped classroom is a demanding method and is much more time consuming for both students and teacher.

The disadvantages of the model are that it requires maybe more work from the teacher and the students. It is a demanding method. It takes a lot more time than, so to speak, traditional teaching. You learn how to use it in time, but the first times, when I used the model, I felt that the time is not enough. By the time it required an awful lot of preparatory work. (Interviewee 7.)

Other interviewees also referred to the planning of the course for flipping. “Of course, the time. That I have enough time to plan and organize it and, like I already mentioned, the resources and the equipment. I think it's the most important thing that we don't have enough time to plan.” (Interviewee 5.)

Another interviewee was concerned how to make it more efficient in practice. The teacher was concerned with the schedule for the course, how to plan ahead and present it to the students. “How should they schedule it right, because scheduling is a problem. How to deliver materials to students on time”. (Interviewee 6.)

4.2.2 Assessment

The change in the assessment of the course was also mentioned by some of the teachers. They were concerned whether the current tests and exams should be replaced in the new flipped classroom model. The topic made teacher question the current methods of assessment they use and their suitability in a flipped model.

And maybe to have larger discussion also about, how the flipped classroom would affect on the tests I'm using. Whether the exams would be the same or different. And how can I be sure, that the students have reached the level of knowledge in the subject that they need. (Interviewee 3.)

Again we would have to think again, how to evaluate, so then maybe couldn't have like the traditional exams at the end, if we think about evaluating the whole process kind of like, whether it was actively bringing the videos and searching information. It has to grant a reward to that, and not just to have the exam at the end. (Interviewee 5.)

4.2.3 Support and encouragement from the department and colleagues

According to the responses, not only time is an important factor to consider, but also support and encouragement of the department and colleagues. One of the interviewees mentioned that the department does provide the needed support.

I have an excellent support. We have a freedom to do the courses exactly the way we like. In the time frame. The time is the only restriction I believe. -- We have a very good attitude amongst the other teachers and the leadership. I must say that is an excellent thing. And we have been trained for this. We are getting training, support, and advise how to do it more. We are very encouraged to do that I believe. (Interviewee 8.)

The respondents stressed the importance of teamwork in introducing new model. Interviewee 2 shared his opinion on the “team work” inside of his department and materials production. The language of teaching and availability of the content are also reasons of working in a team and sharing the materials with the others.

Um, well... we have to do everything ourselves. So it depends only on us. But in our team we share everything. So, it's not only me, who has to do it. Otherwise, it would be impossible. But there are ten people... let's say five people are doing it and sharing it. That helps a lot. You see, the question is mostly, because we are teaching in Finnish. If we were teaching in English, there would be lots of materials we could use already. (Interviewee 2.)

Majority of the respondents would like to have support from the colleagues in introducing the flipped classrooms model. They felt that it would also benefit them to have different perspectives on obstacles that might occur in implementation. The fellow colleagues' experience and knowledge are considered important and valuable.

I would need support from my fellow teachers. That they would introduce these ways of working. And would need more time to let them understand the benefits. To get the team working, the people to know themselves and their teams -- It work be great work in a group of teachers, in a team with teachers. So, you could have small problem that you can find a big one, and keep on thinking how are you going to solve this. But some other teacher might have an answer and the problem is away. So, that would be one thing. Doing this alone would be hard for me. (Interviewee 3.)

Another respondent stated that to be successful the teachers “would have to work together with colleagues and plan together. Because nowadays we have quite a lot of teamwork, and we talk with the colleagues...” (Interviewee 5.)

One interviewee noted that she would consider taking the model into practice if a whole group of teachers would be involved. “If we would have some kind of training and make a joint decision on the fact that we are taking this model, and not only one is trying, and others would just slip away. So it should be a joint decision.” (Interviewee 6.)

4.2.4 Student motivation

Student motivation and unwillingness to actively participate during the contact teaching seems to be one of the problems in current teaching for many interview participants. Talking about traditional model, one of the respondents noted about students’ behavior that, “in general they were more passive, they were waiting for me or other teachers to give them something. Some knowledge.” (Interviewee 2.)

Another participant also mentioned the similar phenomena in her students’ attitude. She stated that the students have certain expectations that create confusion in teacher’s mind. “The students want the teacher to give them the exact template of the things they need to learn, give the ready answers. And then they would have to look for some information, but they are not really oriented that way. (Interviewee 6.)

Some teachers stated that the students want to have traditional teacher-centered lectures themselves based on the feedback they have received. The teachers see the demanding exams as a cause of students’ preference.

And then the students wish to have traditional teaching in this topic They really want that. – – Because the exams are, of course, what they are afraid in subject. So it, of course, reflects to the classrooms and also reflects, what students would like to have from me. And in a way, sticking to this traditional thing, maybe it is also linked to that too. (Interviewee 3.)

They prefer to have the traditional lectures, like when I started a few weeks ago with this group and I asked, what kind of teaching you would like to have. Many people just wrote that they would like to have just lec-

tures, no homework and just listening to the teacher. – – The problem is if they come straight from high school or something, they are more used to have the traditional, so it's very difficult for them as well to start thinking new ideas. (Interviewee 5.)

The interviewees seem to be concerned with how to overcome lack of motivation to be active in students in the flipped classroom. Another concern is finding the right materials and activities for flipping, so that the students would do the out-of-class assignments.

“The challenge would be to find relevant videos and materials and how to motivate the students really to do the homework. If that motivation is OK, then I can see no problems.” (Interviewee 1.)

4.3 Skills needed for flipping

The interview participants were asked what kind of skills do both students and teachers need to benefit from using flipped classroom model, and how would they be different from those in traditional model.

4.3.1 Student skills

Interview respondents felt that the basic set of students' skills in a flipped classroom would include self-discipline, good communication skills, networking skills.

The recurring theme mentioned by the interviewees includes students' self-discipline. The respondents stated that the flipped model would require more determination from the students. “They need to have certain self-discipline or, how would I say... They need to make a schedule for themselves and try to keep it.” (Interviewee 2.) Interviewee 3 also mentioned that the students “would need to be more organized. – – Of course, self-disciplined, because the topic is large.” (Interviewee 3.) “The student should be able to take responsibility for their actions. Such skill. “ (Interviewee 7.)

Another valuable skill mentioned is team working. “They need to be able to work in groups.” (Interviewee 2.) “In flipped classroom... Team working skills. That would be

very useful for them, when they become nurses. To talk with the others.” (Interviewee 3.)

One of the respondents, Interviewee 6, also stated that students would need “more of a social skills to discuss with others, and they should be able to create a team spirit. To understand from the beginning that this is about a group work and not about each student individually.” (Interviewee 6.)

4.3.2 Teacher skills

The flipped classroom model requires use of technology from the teachers. Some interviewees mentioned that teachers would mostly need good technical skills to be successful. (Interviewee 7.) “Very clear speaking for the video recording and mostly clearly showing... type everything clearly and say everything clearly. I would say those are most important things.” (Interviewee 4.)

The respondents also emphasized the importance of understanding the subject and planning the course to facilitate students’ learning. Teachers should be also able to carefully structure and plan the course for flipping specifically. “I would say, that teacher needs to "chew" the topic in such pieces that the students can swallow. So it has to be planned in advance quite well.” (Interviewee 2.) “The teacher must be able to learn how to manage the whole course, and be able to design it throughout the course, that the planning would be consistent. “ (Interviewee 7.)

4.4 Producing videos

The interview participants were asked if they have any experience in making videos for teaching purposes, and if not, would they like to produce the teaching content in a video format. The participants were asked if they see videos as a medium for teaching their subject. Although most of the respondents have experience in producing instructional videos for teaching, they are not certain about making those videos in the future for utilization.

Most of the teachers stated that they have had some experience in filming the videos. Some of the interviewees actively produce different types of instructional videos for the students and use them to aid their theory learning process. One of the teachers described several types of videos he produces for the course.

The videos.. well, there are two different types, maybe even three different types of videos we have. There are something we call "lecture videos". They are not recorded lectures - we don't do that, at least at the moment. They are really short, really specific at one topic, 5-10 minutes inserts to a certain question or a certain law of physics. And those they are hopefully watching before they come to class. -- They are mostly homework solutions, in which we do it in a very simple and straightforward way. Just by having a camera, pen and paper... and doing it. So it's one recording. Voice and video at the same time. The third one is to record, for example, a measurement and publish it as a video. (Interviewee 2.)

Another teacher tried video format for showing homework assessment and acting out the real-life situations for the students.

I in a way acted with a real doctor, and I was the patient. And then I played it in the classroom. What happens at the doctor's appointment. It is very funny, because it's not very professional. And then I've done one of these recordings. I tested it, but I couldn't use it, because I don't have the time for it in the big groups. And then, when they leave an essay, I would show them the essay, and then record my voice and how my mouse goes there... or if I write in the text that "this is good" or "you are missing part here", and "this you don't write at all" or so. And then I've given the students recorded video. (Interviewee 3.)

One of the teachers has done the videos with her colleagues previously, but not really sure about producing the videos for lectures by herself. She found the process of video filming to be interesting experience and that it had a positive impact on students as well. The statement can be interpreted as a need to work on videos rather in a team with fellow teachers than alone.

We have done it once with my two colleagues. So we just came up with the idea for PBL trigger that we make a little, short video. And it was quite funny. Didn't take long time, and the students kind of liked it, because it was us teachers being actors -- I think, I'm not very keen on standing in front of the camera. I don't like taking photos or videos. (Interviewee 5.)

Another teacher responded that although she hasn't produced videos herself, she would be interested in doing so, if she would have time. "The videos would give my students an alternative of being present in the classroom." (Interviewee 6.) She sees the videos as a solution for those students, who are not able to be present in the class, but still would need to learn the same materials. That way she would be sure that the students have the equal opportunities of learning.

Another respondent perceives well-produced videos as a valuable tool in teaching. He has a clear vision and understanding of what would those videos look like. However, he hasn't considered producing the videos himself for his subject of teaching.

Those videos should be something else, not just talking heads. So... if it's just me talking to the students on the videos, maybe it is almost the same that they come to the classroom or even worse... I have never considered that. Also that might be a little bit laborious. And you should have good ideas and kind of story, and narrative for each video that you produce. It's not just that you talk 5 minutes or 10 minutes and that's it. But there should be some kind of clue with every video. And if you take any of those professionally produced videos, I think that there is enormous work behind. So, yeah... I couldn't really imagine that I create videos in the framework of the course. It's a different thing. (Interviewee 1.)

5 RECOMMENDATIONS FOR TAMK

In order to increase the usage of the flipped classroom model in current teaching, TAMK needs to address teachers' concerns and provide reliable solutions to the problems. According to the interview results with TAMK teachers, the main concern they have with flipped classroom model is time. They believe that it is more time-consuming than the traditional teaching. Flipping the classroom means restructuring the course, planning the agenda, and searching for the new materials. In order to successfully use the model, TAMK teachers would need more time allocated to its implementation. The management of TAMK would need to work closely with the teachers, who are willing to try the model out and provide the possibility to reassign responsibilities and allocate teachers' time differently.

As was discovered from the interviews those teachers who are interested in piloting the flipped classrooms would need support from both department and peer-teachers to make a decision about model implementation. It would be much easier for them to "step into unknown" while working in a team and moving towards the change together. TAMK teachers would benefit greatly if the teams of teacher-enthusiasts would be formed for this purpose. Making the decision on a department level would also spread the word about flipped classrooms and get more people involved.

Technical support is also an important factor to consider. If teachers would have all the equipment they need for flipped classroom implementation, they would be more motivated to pilot it. To encourage the usage of the model TAMK needs not only to supply the equipment, but also to provide required training. Interview respondents have mentioned that the teachers need to know how to use the technology to succeed in flipping the classroom.

Lack of knowledge might be another reason to decline the implementation of the model. Some teachers might feel that they don't have enough information about the flipped classrooms. This problem can be solved by providing relevant information on modern teaching techniques in a form of a workshop, as an example. The suggested workshops would also introduce the model to the teachers who haven't heard about it before. This step would allow popularizing the method among the teaching personnel at TAMK. The

university has the required facilities and resources to improve the current situation. Inviting world's leading experts and educators would also showcase the best practices of using flipped classrooms.

Based on the interview results there seems to be a gap in teachers' awareness about the flipped classrooms. Some teachers have been using the model for several years, and some of them haven't even heard about it. To fill this gap TAMK needs to improve communication between the departments, so the teachers could easily spread the knowledge and experience to the others. Experienced TAMK teachers would have an opportunity to share their results, obstacles, and useful tips with peer teachers.

Several interview respondents have mentioned the concern with available materials for flipping the classrooms. It would be helpful to create a common resource for all the teachers, where they could find current information and materials. The blog or an online-community would fit the best for this purpose.

Implementation of flipped classrooms model into teaching doesn't require drastic change from the university. To increase the utilization of flipped classrooms TAMK needs to have a clear vision of what is the current state of teachers' development. The university is expected to provide training, technical and social support for the teachers, as well as to encourage them to test the flipped classroom teaching model.

6 CONCLUSIONS AND DISCUSSION

The research explored the TAMK teachers' perception and opinion on flipped classrooms model. The majority of the respondents have prior knowledge on the flipped classrooms model. Some of them have heard about it before the interview, and some of them are even using it in teaching. Those teachers, who have previously used the model, could speak from the experience, and those, who have no practical experience, had to rely on their pedagogical expertise.

The results of the interview analysis revealed that most of the respondents identify benefits and drawbacks of the model in a similar way as mentioned in the theoretical framework of the research. All of the interviewees found the model to be beneficial for learning one way or another. They seem to share the opinion that flipping the classrooms promotes effective learning. It allows students to get deeper knowledge and fixate it for the longer period of time. According to the respondents' opinion, shifting theory learning outside the classroom results in better students' preparedness to the contact teaching activities. That way students spot the obstacles on the early stages of learning. Getting the first exposure to the subject before coming to class also means that the involvement into the learning process starts promptly.

In flipped classroom students take the more active role due to the shift in responsibilities. Several teachers have mentioned the problem that occurs quite frequently in the classroom: the students expect teachers to lecture. Although the active participation in the discussions is promoted and encouraged by many teachers, the students are playing passive role during the contact teaching. The issue might be a result of the teaching methods used in students' previous education. Many of them come to the universities of applied sciences straight from high schools, where traditional way of teaching is lecturing. Flipped classroom model might be used as one of the methods to resolve this problem. As some teachers have noted the concept should be explained in the beginning and maintained by other teachers.

Another thing mentioned by the respondents is that the students are expected to be more organized and self-disciplined to benefit from learning. Ability to work in teams would also support students in succeeding in the flipped classrooms. At the same time acquir-

ing good communication skills would be beneficial for both studying and working life later on.

During the discussion it was revealed that there are some concerns about the method proposed by the interviewer. Most of the respondents noted that flipping the classroom is much more time consuming. The courses for flipping need to be restructured or sometimes designed and planned from the scratch. Finding the right materials and coming up with in-class activities also takes a lot of teacher's time.

Based on the interview responses, in order to feel more comfortable and confident in implementing the flipped classroom model teachers would need support on the department level. The respondents stated that the support from the colleagues is also important. They would feel more positive towards the change if the supervisors and peers would encourage it.

When asked about any experience in video filming for the teaching purposes, most of the interviewees replied that they have tried making videos, but not many of them are willing to produce videos themselves for flipping. For those who are not sure about using videos, flipping the course using books, articles, and maybe using videos provided by other educators would be the most suitable method for the beginning.

Although the majority of the respondents are interested in utilizing the flipped classrooms teaching model in the future, their current position on its usability is uncertain. The best strategy to start with flipped classroom model would be piloting some topics within the course in a flipped form.

The research provided a broad overview of TAMK teachers' familiarity, opinions, and motivation on using flipped classrooms. Despite the fact that the sample of study is quite small, the research revealed that there seems to be dissimilarity in perception and attitude towards the flipped classrooms as a modern teaching method. As a university of applied sciences, TAMK, needs to get a bigger picture of what TAMK's teachers' views are and what skills they already have to successfully implement the model.

To get a broader overview of the teachers' perceptions of the new teaching models, and how to change the current motivation and attitudes, and improve the reliability of the

current research findings the additional study with greater number of participants representing other degree programs is needed.

In the process of writing this thesis the author of the study has gained a valuable knowledge in a field of education and especially about eLearning and flipped classrooms. The thesis findings have impacted the views and opinions of the researcher on the trends and issues in current education. The experience of conducting research of qualitative nature and in-depth interviews has benefited the author greatly and has awakened interest of further research of flipped classrooms model and its benefits and implementation. The author of the thesis hoped that by researching this topic and conducting the interviews at TAMK she brought attention to the flipped classrooms and attracted the teachers to try the model out.

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APPENDICES

Appendix 1. Interview guide

flipped-classroom menetelmä = käänteinen opetusmenetelmä / ajattelumalli
(text in italic marked for the interviewer)

1. Can you please describe your typical lecture?
 - a. *format of the lecture*
 - b. *materials*
 - c. *technology used*

Mikä on tyypillinen luentosi rakenne?

- a. *Formaatti / suunnitelma*
- b. *materiaalit*
- c. *tekniset laitteet*

(Introduce flipped classroom delivery mode - infographic)

2. Have you ever heard of flipped classrooms delivery mode before?

Oletteko koskaan kuullut flipped classroom opetusmenetelmästä?

3. What is your opinion on flipped classroom model?
Meaning use of videos to learn theory at home, and instructed activity-based practical part to happen in class
 - a. *benefits*
 - b. *drawbacks*

Mitä mieltä olet FC-opetusmenetelmästä? Mahdolliset edut ja haitat.

4. If you would implement flipped classrooms, what in your opinion would be the impact?
 - a. *quality of learning*
 - b. *engagement*
 - c. *student-teacher relationship*
 - d. *course outcome*

Jos ottaisitte FC menetelmän käyttöön, miten se vaikuttaisi:

- d. *oppimisen laatuun*
- e. *opintoihin kiinnittymiseen*
- f. *vuorovaikutukseen opiskelijan ja opettajan välillä*
- g. *oppimistuloksiin*

5. What skills on your opinion would students need to benefit from a flipped classroom environment?

Millaisia taitoja opiskelija tarvitsee käyttämään FC menetelmän hyväkseen?

6. What skills on your opinion would teachers need to benefit from a flipped classroom environment?

Millaisia taitoja opettaja tarvitsee käyttämään FC menetelmän hyväkseen?

7. If you decide to implement flipped classrooms, what are the factors that would influence your decision? (**Social+practical**)

- a. *suitability of the course*
- b. *preferred teaching style*
- c. *availability of content*
- d. *quality of the content*
- e. *language barrier*
- f. *time consuming*
- g. *technology*

Jos ottaisitte FC menetelmän käyttöön, mitkä ovat ne tekijät, jotka saattavat vaikuttaa päätökseen?

- h. *kurssin sopivuus*
- i. *suositeltu opetustyyli*
- j. *oppimateriaalien saatavuus*
- k. *materiaalien laatu*
- l. *kielimuuri / kielikynnys*
- m. *ajan kulutus*
- n. *käytettävissä olevat tekniset laitteet*

Appendix 2. Quotations, codes and families

